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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/026,961	12/27/2001	Young Hun Ha	8733.524.00	7359

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EXAMINER	
LANDAU, MATTHEW C	
ART UNIT	**PAPER NUMBER**
2815	

DATE MAILED: 10/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/026,961	HA ET AL.	
	Examiner	Art Unit	
	Matthew Landau	2815	

-- Th MAILING DATE of this communication appears on the cov r sh t with the correspond nc address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 August 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) *10-14* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9 and 15-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Objections

Claim 8 is objected to because of the following informalities: The claim defines a "second protective layer", however that is the only protective layer defined in that claim or any preceding claim. Therefore, it is unclear what it is referred to as the "second protective layer". Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 2, 4, 5, and 7-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the gate insulating film". There is insufficient antecedent basis for this limitation in the claim.

In regards to claim 2, it is unclear if the gate insulating film defined in claim 2 is the same as the gate insulating film defined in claim 1. If there are two separate gate insulating films, it is suggested Applicant label them as first and second gate insulating films.

In regards to claim 4 and 5, it is unclear is the semiconductor layer defined in claim 4 is the same as the semiconductor layer defined in claim 2. If not, it is unclear which semiconductor layer the limitation "the semiconductor layer" (claim 5) refers to. It is also unclear if an active layer exists above the gate electrode. Note claims 8 and 9 have similar problems.

In regards to claim 7, the limitation "simultaneously patterned as the storage electrode" renders the claim indefinite. Does Applicant intend to claim the storage electrode is formed from the semiconductor layer?

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 20, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Han et al. (US Pat. 5,926,235, hereinafter Han.

In regards to claim 1, Figures 4 and 5I of Han disclose a liquid crystal display device including a data line 115 supplied with a data signal, a gate lines 117 supplied with a scanning signal, a pixel electrode 104 for driving a liquid crystal cell, and a thin film transistor for responding to the scanning signal to switch the data signal into the pixel electrode, the device comprising: a storage electrode 130 overlapping with the gate line forming a storage capacitor; a first protective layer 113a being formed between the storage electrode and the pixel electrode at an overlapping area between the storage electrode and the pixel electrode; and a second protective layer 113a formed between the gate insulating film 109 and the pixel electrode.

In regards to claim 2, Figure 5I of Han discloses a gate insulating film 109 on a substrate 110 in such a manner to cover the gate line; and a semiconductor layer 111/112 between the gate insulating film and the storage electrode.

In regards to claim 3, Figure 5I of Han discloses the first protective layer 113a is formed at each side edge of the storage capacitor (column 4, lines 28-32).

In regards to claim 4, Figures 4 and 5I of Han disclose a gate electrode 107 contacting the gate line 117 on the substrate 110; a semiconductor layer 111/112 on the gate insulating film; and a source electrode 105 and a drain electrode 106 on the semiconductor layer.

In regards to claims 5 and 21, Figure 5I of Han discloses the semiconductor layer 111/112 has an active layer 111 and an ohmic contact layer 112. The limitations "the active layer is patterned simultaneously with..." and "the ohmic contact layer is patterned simultaneously with..." are product-by-process limitations that do not structurally distinguish the claimed invention over the prior art.

In regards to claim 20, the product-by-process limitation "wherein the first protective layer is simultaneously formed..." does not structurally distinguish the claimed invention over the prior art.

Claims 6-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Lee.

In regards to claim 6, Figures 3 and 4F of Lee disclose a liquid crystal display device including a data line 123 supplied with a data signal, a gate lines 113 supplied with a scanning signal, a pixel electrode 139 for driving a liquid crystal cell, and a thin film transistor for responding to the scanning signal to switch the data signal into the pixel electrode, the device comprising: a storage electrode 119 overlapping with the gate line forming a storage capacitor; and a pixel electrode 139 covering an upper surface and each side edge of the storage electrode (see Figure 3).

In regards to claim 7, Figure 4F of Lee discloses the gate line 113 formed on a substrate 11; a gate insulating film 129 formed on the substrate to cover the gate line; and a semiconductor layer 131/133 formed on the gate insulating film. As best the examiner can ascertain the claimed invention, the limitation "simultaneously patterned as the storage electrode is a product-by-process limitation that does not structurally distinguish the claimed invention over the prior art.

In regards to claim 8, Figures 3 and 4F of Lee disclose a gate electrode 117 connected with said gate line on said substrate; a gate insulating film 129; a semiconductor layer 131/133 on said gate insulating film; a source electrode 127 and a drain electrode 137 on said semiconductor layer; a second protective layer 135 on said gate insulating film; and the pixel electrode 139 on said protective layer.

In regards to claim 9, Figure 4F of Lee discloses the semiconductor layer 131/133 has an active layer 131 and an ohmic contact layer 133. The limitations "the active layer is patterned simultaneously with..." and "the ohmic contact layer is patterned simultaneously with..." are product-by-process limitations that do not structurally distinguish the claimed invention over the prior art.

Claims 15-19 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by the admitted prior art.

In regards to claim 15, Figures 1 and 2 of the instant application discloses a liquid crystal display device, comprising: first 1 and second (not shown, page 3, lines 1-3) substrates; a gate line 2 and a data line 4 over the first substrate, the data line crossing the gate line to define a pixel region; a thin film transistor T having source and drain electrodes (8 and 10) at the crossing

of the gate line and data line; a storage electrode 30 over the gate line; a pixel electrode 22 over the storage electrode; a first protective layer 18 (right side) on the storage electrode between the storage electrode and the pixel electrode; a second protective layer 18 (left side) formed between a gate insulating film and the pixel electrode; and a liquid crystal layer between the first and second substrates (page 3, lines 1-5).

In regards to claim 16, Figure 1 of the instant application discloses a pixel electrode 22 of an adjacent pixel region extends over the storage electrode 30.

In regards to claim 17, Figure 2 of the instant application discloses a storage capacitor is formed between the storage electrode 30 and the gate line 2 and wherein the first protective layer 18 overlaps a portion of the storage capacitor.

In regards to claim 18, Figure 2 of the instant application discloses a storage capacitor is formed between the storage electrode 30 and the gate line 2 and wherein the first protective layer 18 overlaps a lower edge of the storage capacitor.

In regards to claim 19, Figure 1 of the instant application discloses the pixel electrode of the adjacent pixel region is substantially rounded where the pixel electrode of the adjacent pixel region extends over the storage electrode.

In regards to claim 22, the product-by-process limitation "wherein the first protective layer is simultaneously formed..." does not structurally distinguish the claimed invention over the prior art.

Response to Arguments

Applicant's arguments filed August 8, 2003 have been fully considered but they are not persuasive.

In response to Applicant's argument regarding claims 1-5 that Han does not teach or suggest "a first protective layer formed between the storage electrode and the pixel electrode...", Figure 5I of Han clearly shows a portion of the protective layer 113a immediately to the right of the storage electrode 130 is between the storage electrode and the pixel electrode 104. Figure 5I of Han also discloses a portion of the protective layer 113a immediately to the right of the drain electrode 106 is between the gate insulating film and the pixel electrode.

In response to Applicant's arguments regarding claim 15 that the admitted prior art fails to teach "a second protective layer formed between a gate insulating film and the pixel electrode", Figures 1 and 2 of the instant application clearly show a protective layer 18 formed between a gate insulating film 12 and the pixel electrode 22. It should also be noted that the subject matter shown in Figures 1-7 is discussed in the background section, and those figures are labeled "Conventional Art", which carries the same meaning as "Prior Art". Therefore, it is considered that the aforementioned subject matter is an admission of prior art.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew C. Landau whose telephone number is (703) 305-4396.

The examiner can normally be reached from 8:30 AM - 5:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (703) 308-2772. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

GEORGE ECKERT
PRIMARY EXAMINER

Matthew C. Landau

Examiner

October 19, 2003